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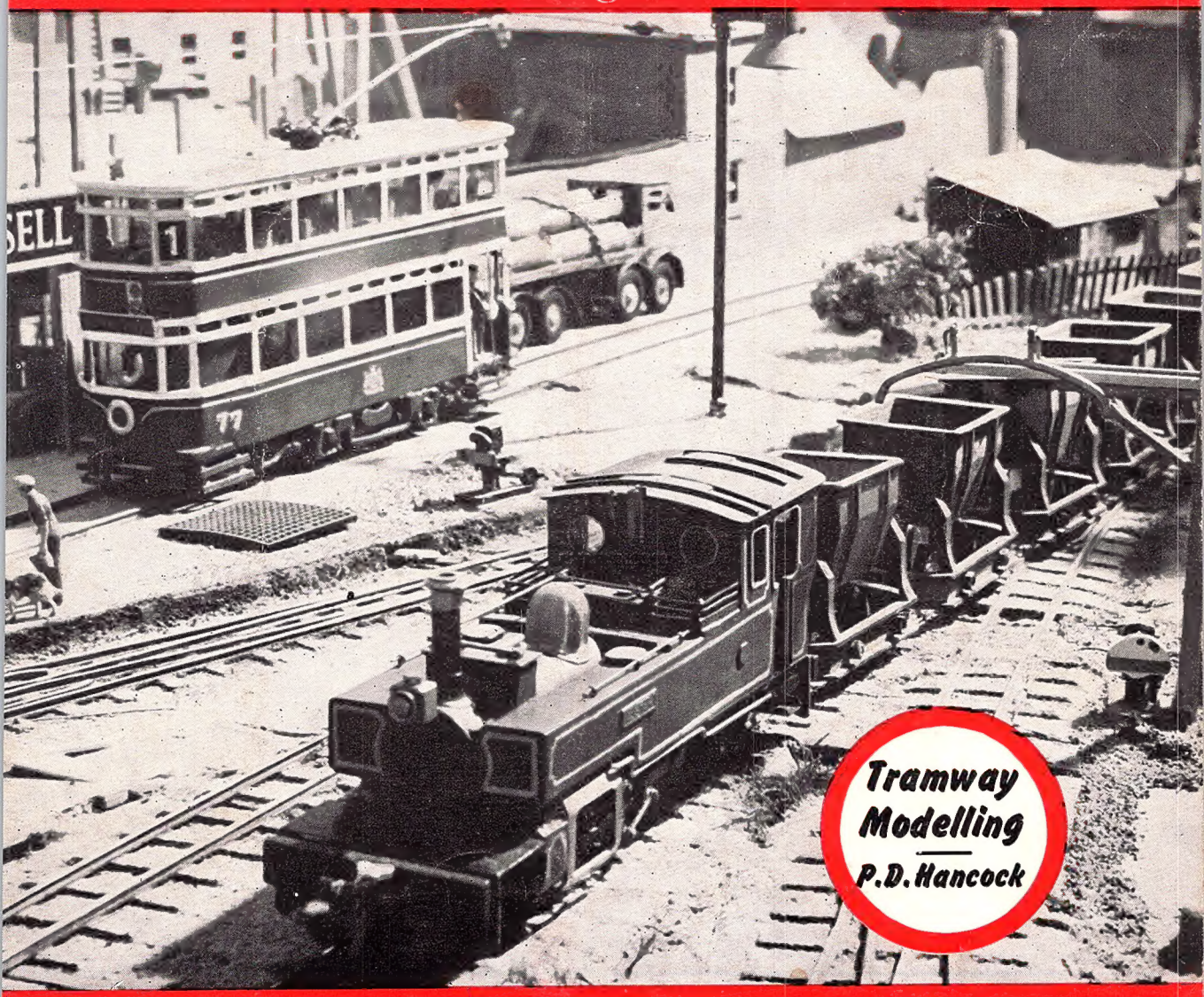

Tramway Modelling

P.D. Hancock

VOL 7 1956 1/6 SEPTEMBER

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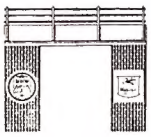

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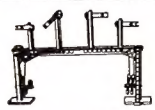

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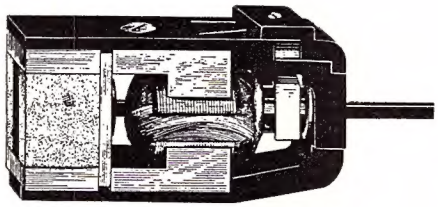

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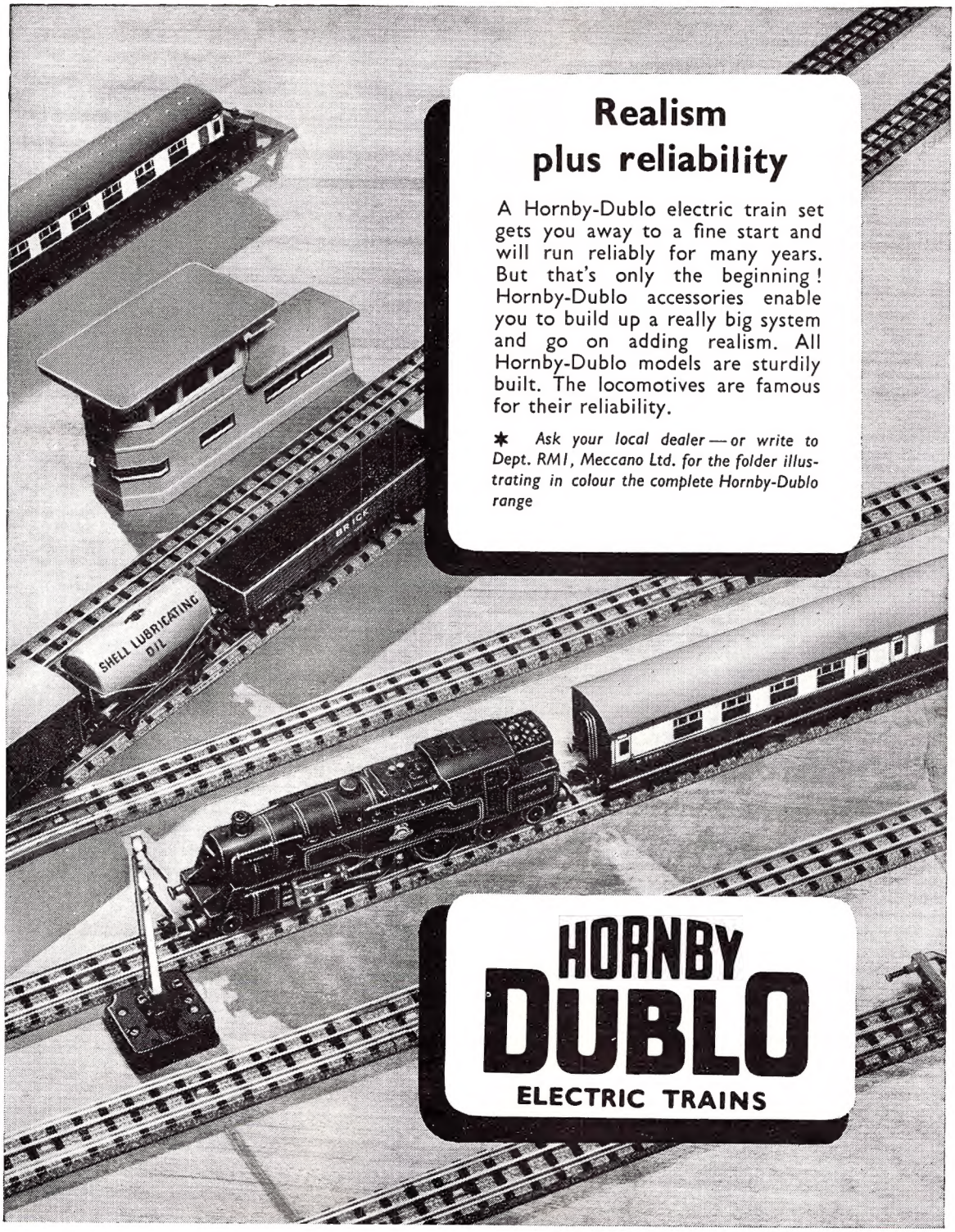
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For the Average Enthusiast Specializing in Small Scale Railway Modelling

VOL. 7. No. 71. SEPTEMBER 1956

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BACK NUMBERS

Back numbers of most issues of the "Railway Modeller" from November 1951 are available, price 9d. each plus postage (3d. first copy, 1d. each additional copy). We regret that certain issues are now out of print, while stocks of many others are low.

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NEXT MONTH

In "Return to the West Country" A. S. Taylor describes the resurrection of his G.W.R. "OO" gauge layout after its removal from Bournemouth to Birmingham. Our "Do It Yourself" article features turntables.

THE LOBBY

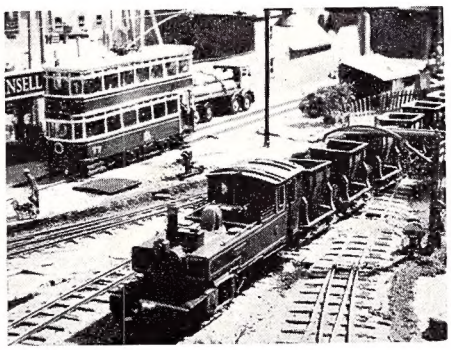
WE are always encouraged by the enthusiasm displayed by our younger readers, who, delighting in their first model railway, often write excitedly to tell us everything, or to ask advice on a tricky problem. We are always pleased to help these newcomers, for we know that the health of our hobby depends on these very recruits.

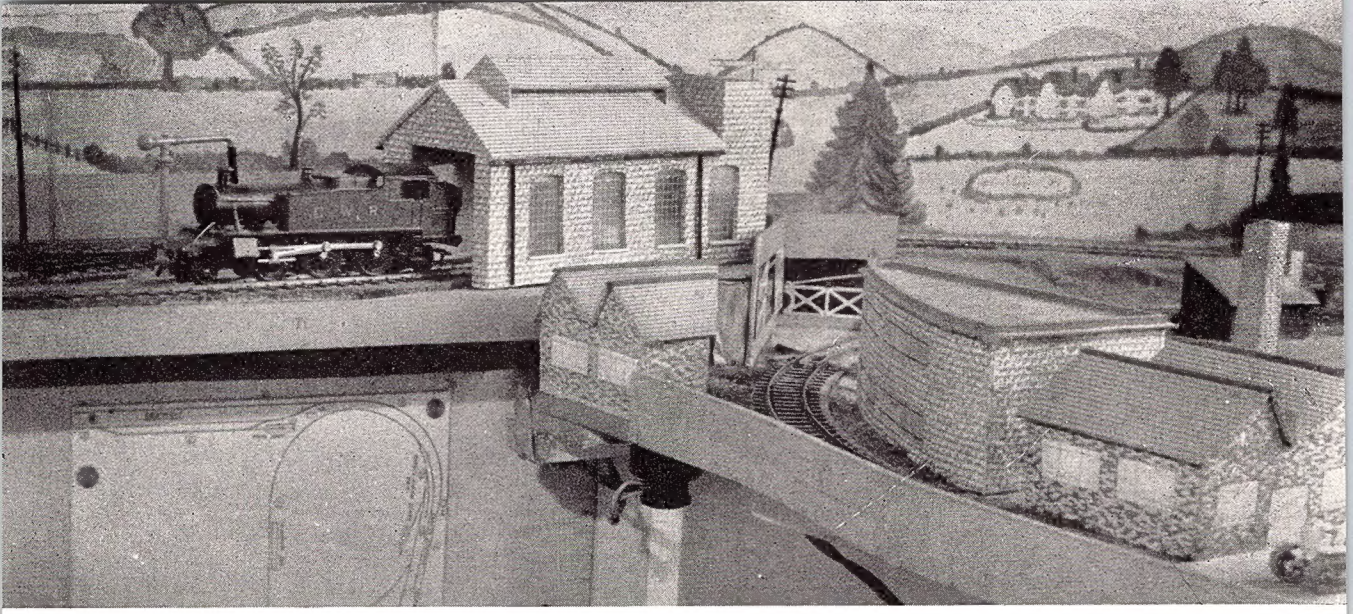
We have therefore decided, as we feel sure it is your wish, to include something in each issue of the RAILWAY MODELLER for the younger enthusiast, and have now settled upon a form for the new section, the first of which appears this month, entitled "Junior Modeller." We believe, from a careful study of letters, that the special articles contained therein will be of particular interest to the junior members of the fraternity. We know, for example, that proprietary equipment forms the major portion of their layouts, and therefore, with the co-operation of the leading manufacturers, we shall be describing the use and maintenance of this specialized equipment. We shall also give, each month, a layout plan using the section tracks, components which enable him to change his system at will, and thus learn by experience the rules of track planning.

However, this is the junior section, and its ultimate form will be determined by the needs of those for whom it is intended. We therefore ask them to let us know their requirements, and to send us details, with photographs if possible, of their achievements for inclusion in forthcoming issues of "Junior Modeller." The future of the hobby lies in their hands, and we on our part wish to give them all the help and encouragement within our power.

COVER PICTURE

Tramway and narrow-gauge railway run side by side on P. D. Hancock's Craig and Mertonford Railway.





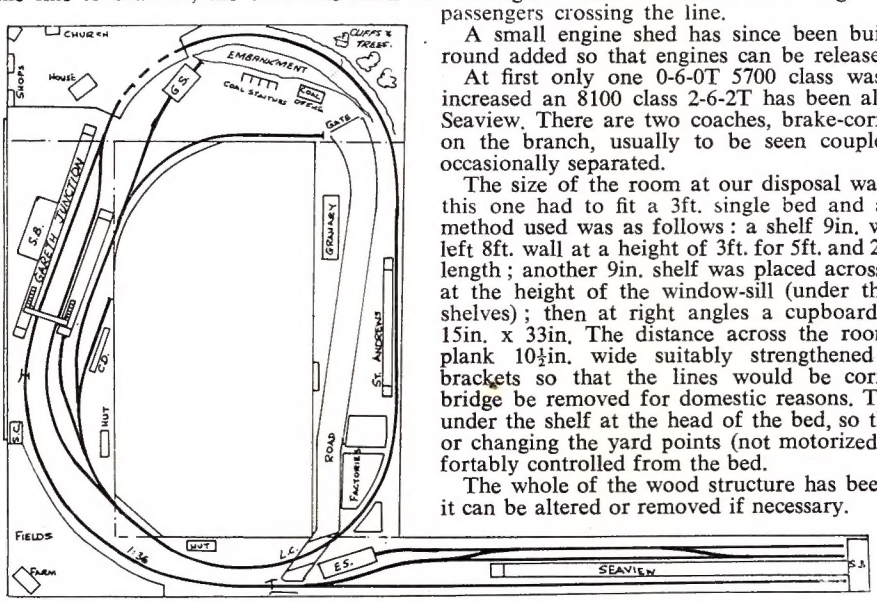
Railway of the Month

THE SEAVIEW BRANCH

by G. L. Hoare

AT the insistence of the local landowner, one Sir Andrew Hoare, the G.W.R. authorities came and surveyed the area in October 1953 with a view to constructing a branch line from Gareth Junction to Seaview. It was only a matter of weeks after this survey that the first materials began to arrive on the scene.

Construction began at Seaview. An island platform with the usual station buildings at right-angles to it at one end was built and the two lines were laid in place, coming together through an ordinary left-hand point at the end of the platform; a standard-pattern G.W.R. signal-box was provided here. Then the line crosses the road by an overhead bridge and begins to descend a short, sharp incline (1 in 36) round a right-hand curve to enter Gareth Junction. Here another G.W.R. type signal-box is provided and because of the branch line the station buildings were enlarged and the station now became similar to two single line stations side by side, one serving the line to Seaview, the other the main line through St. Andrews halt. A footbridge was provided for the use of passengers crossing the line.



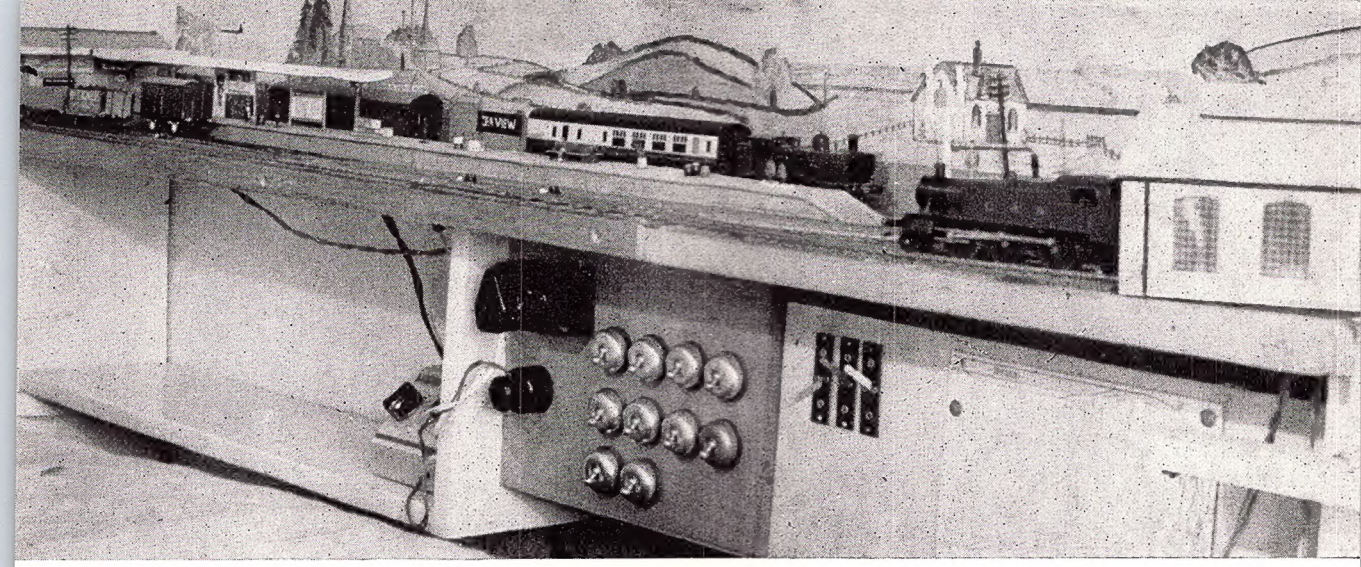
An "OO" system in a bedroom.

A small engine shed has since been built at Seaview, and a run-round added so that engines can be released from their trains.

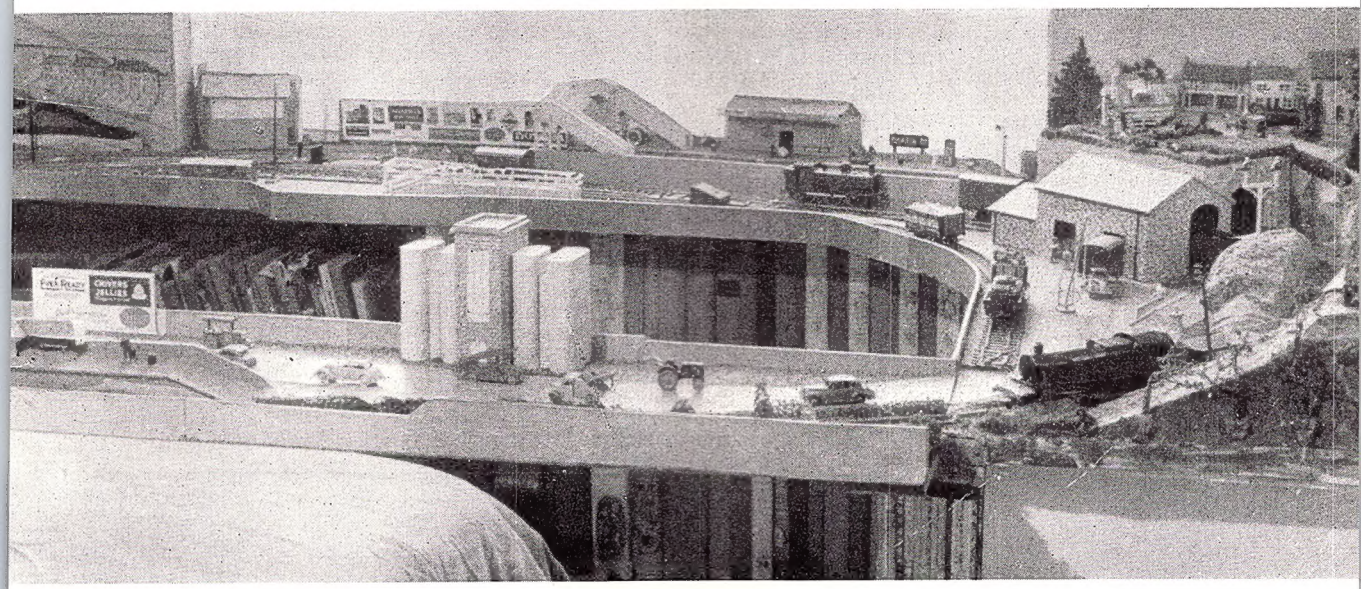
At first only one 0-6-0T 5700 class was employed, but as traffic increased an 8100 class 2-6-2T has been allocated to the sub-shed at Seaview. There are two coaches, brake-corridor and suburban brake, on the branch, usually to be seen coupled together, but they are occasionally separated.

The size of the room at our disposal was only 8ft. x 6ft., and into this one had to fit a 3ft. single bed and a small child's chair. The method used was as follows: a shelf 9in. wide was erected along the left 8ft. wall at a height of 3ft. for 5ft. and 2in. lower for the remaining length; another 9in. shelf was placed across the 6ft. way of the room at the height of the window-sill (under this were built open book-shelves); then at right angles a cupboard was built with a flat top 15in. x 33in. The distance across the room was then bridged by a plank 10½in. wide suitably strengthened and fitting into special brackets so that the lines would be correctly aligned should the bridge be removed for domestic reasons. The control panel is placed under the shelf at the head of the bed, so that apart from uncoupling or changing the yard points (not motorized yet) the line can be comfortably controlled from the bed.

The whole of the wood structure has been screwed together so that it can be altered or removed if necessary.

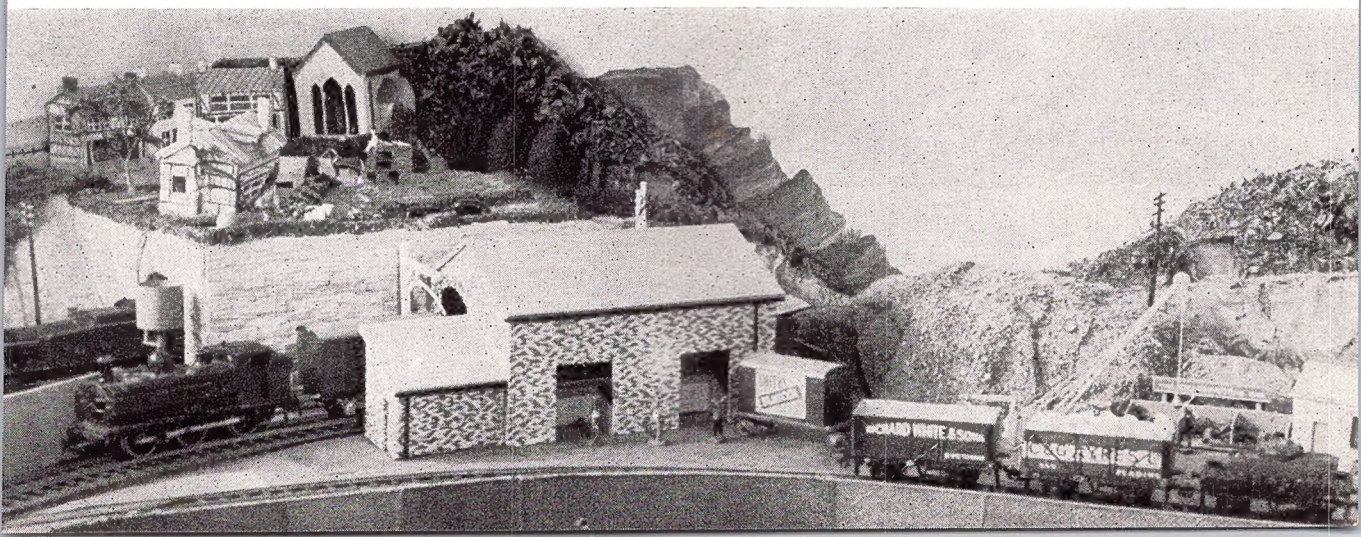


Seaview station, showing control panel.



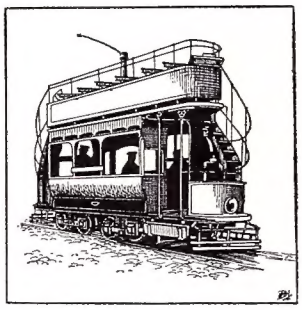
Looking across St. Andrews to Gareth Junction.

The goods yard and village.



TRAMWAY MODELLING

in 4mm. Scale



by P. D. Hancock

Part 1—Tramcars

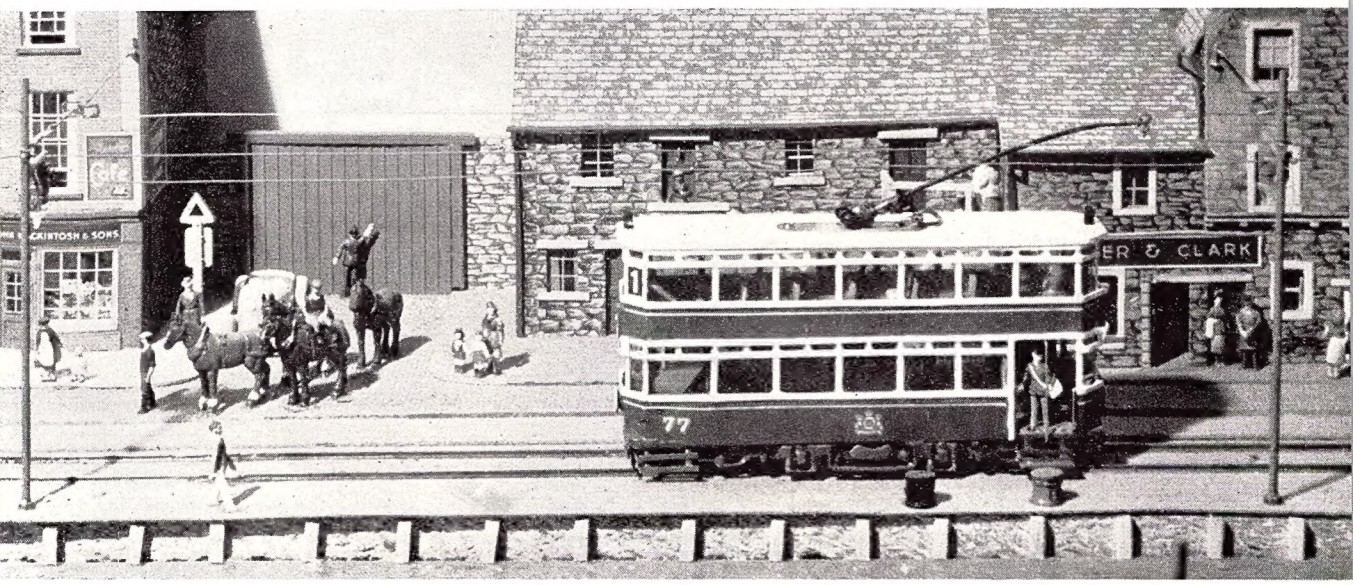
SOME months ago I paid a visit to Mr. Nigel Macmillan, of Glasgow, and found myself very intrigued by the small tramway system which forms part of his "O" gauge layout. The result, I suppose, was inevitable. Anyway, Craig Burgh town council has now voted by seventeen votes to five in favour of scrapping its present uneconomical fleet of motor buses and investing in a nice old-fashioned tramway.

A single line of 4mm. scale tramway track now runs along Craig harbour front, round the boat-building yard, down past the narrow-gauge station, and across the harbour entrance by means of a swing bridge. The system is, in fact, a complete oval, but to disguise this fact a dummy track leads off from Harbour Street, while down on the station side of the harbour there is room for a small tramway depot which will eventually contain one or two sidings, work buildings, and other odds and ends. The whole thing is just about as simple as it could be, and yet (such being the nature of tramways) it could easily have a capacity of up to five tramcars—which means that I have plenty to do before I exhaust its possibilities!

The actual construction of tramcars in 4mm. scale is a reasonably straightforward task, and the main decision which the modeller has to make is whether or not he is prepared to see an overscale motor bogie sticking up into the lower deck. If not, he will have to use a small motor, such as one of the new K's motors, and mount it right between the wheels. This will involve a somewhat complicated system of gearing, and whether or not this will work will depend upon the individual modeller's skill. In my own case it did not work, and I have fallen back upon the use of Romford motor bogies fitted with 9.5mm. diameter wheels and suitably doctored sideframes—the easy way out, no doubt, but the motors are surprisingly unnoticeable, and they certainly do save a lot of trouble for ham-fisted folk like myself.

The adaptation of the bogie sideframes can be

Tramcars now clank merrily along Craig waterfront.



managed in a number of different ways, and one method of going about the job is indicated in Fig. 1. No doubt it would be possible to solder bits and pieces directly on to the castings, but there is always a danger of ruining things irrevocably when one starts playing about with the soldering iron. It might, therefore, be safer in the long run to drill and tap the sideframes in a number of places for 10 and 12 B.A. screws and to solder all new fittings to these.

The next step is to remove the original 14mm. diameter Romford wheels and to substitute new smaller wheels. The smallest wheels which could possibly be used in conjunction with the Romford worm wheels would be 9.5mm. in diameter, but wheels of this precise diameter might be rather hard to come by unless the modeller had access to a lathe or could get wheels specially turned for him. Instead, therefore, he could use some of the "HO" wheels which are now appearing on the market, or else a set of the 10mm. diameter "TT" gauge wheels. Varney wagon wheels—if the modeller can obtain them from America—are just about perfect for the job.

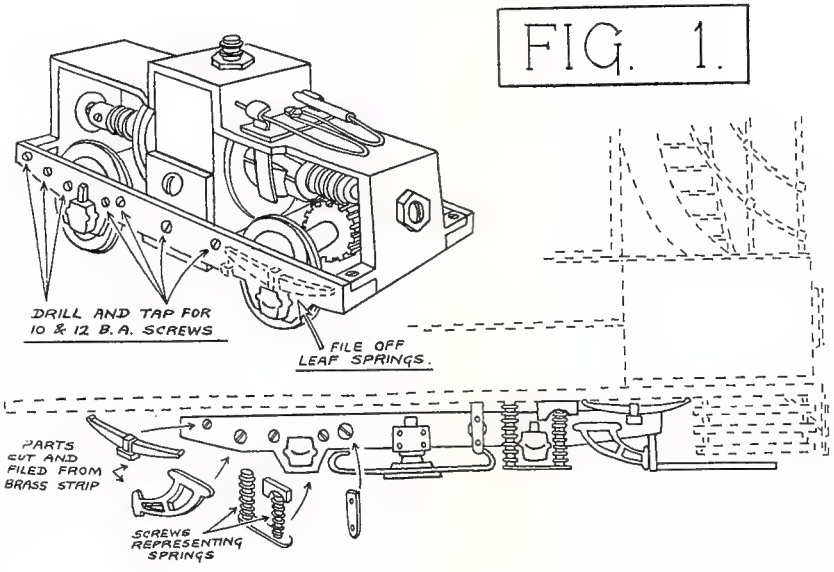
At this juncture a word about the actual fitting of wheels on to axles may not be out of place. I suppose the ideal method of mounting wheels is to use a drill press, or to force them together in a lathe, or to do something else equally scientific; but I do not possess these adjuncts, and I have tried all sorts of other methods, including the oft-recommended one of pressing the wheels on to the axles in a vice. I have even purchased a gadget specially designed for the job, and while this worked after a fashion it was never very reliable, and there was always a tendency for axles to bow up in the middle when pressure was applied. In short, none of the recommended methods seems to work for me, and I may as well admit that the only really safe and reliable method that I have found of getting wheels on to axles is to hammer the wretched things on!

Mind you, it is no good just taking hold of a hammer and "having a bash"—one must go about things with a certain degree of caution! The most important thing is to make sure that the hole in the wheel is not too small for the axle, and after the wheel has been drilled out with the recommended drill size the hole should be enlarged a little further, either with a reamer or else with an ordinary rat-tailed file. The hole is then countersunk at the rear so as to give an entry to the axle, and the wheel is then placed on top of a specially prepared piece of flat steel* which has a slot cut in it to allow for the passage of the axle (Fig. 2a). The axle itself is then greased with vaseline, held vertically in position, and given a few trial taps with the hammer. After you have been mounting wheels for some time by this method you soon get to know if the wheel is going on too tightly or not. If it is, there is no use going on in the hope that everything will be all right—the chances are that you will simply end up with a bent axle. The wheel must just come off the axle again, and the hole be enlarged a bit further. Incidentally, to get the wheels off the axle they are simply placed as shown in Fig. 2 and the hammer is brought into play again! Finally, when the wheels are eventually mounted, and have been checked for gauge and wobble, the ends of the axles can be domed or pointed or finished off in whichever other way you choose.

However, to get back to tramcars. The body of my own vehicle was built up out of sheet brass and nickel-silver strip along the lines indicated in Fig. 3. It would, however, have been better (and easier, in the long run) to have cut and filed the windows out of the brass sheet, and added strip beading afterwards. This would at least have provided a flat surface in the interior of the tram for the window celluloid to rest against. As it is, the celluloid is set too far back, and while this is not really very noticeable it is definitely annoying. Since making this tram, in-

* Or even, let it be whispered, on top of a vice.

FIG. 1.



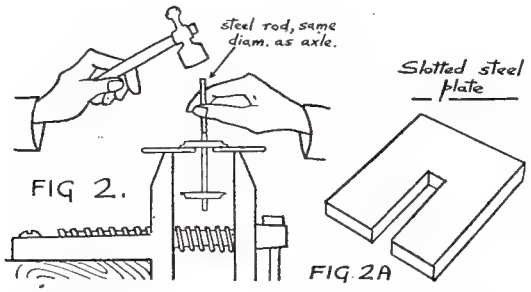


FIG 2. FIG. 2A

deed, I have been carrying out a few further experiments with cardboard, and am coming to the conclusion that this is perhaps the most suitable material of all for the construction of tram bodies—in 4mm. scale, at least. The sides are easily drawn out on a sheet of thin Bristol board somewhat after the style of a Micromodel cut-out, and the window openings are then cut out with a razor blade or one of the art-craft cutting tools now available. The resulting sides may appear rather flimsy, but when they have been backed by sheet celluloid, and when the interior floor has been added, they will be found quite strong enough.

Stairways of the traditional curved variety are certainly awkward things to make realistically. They could be built up laboriously from metal, but it seems far easier to use card, even when the rest of the tram is being made of metal. However, not every tramcar has these curved stairways. Many of the more modern types even have straight stairways—and this, I must confess, is the type which has been fitted to my own tram.

The actual fittings of a model tramcar can be just as elaborate or as simple as you choose. You can fit proper working seats if you have a mind to, or else you can content yourself with wood and card dummies. Indicator lights can consist of the smallest size of artificial jewel obtainable from art and craft shops, while suitable names for destination boards can often be cut from newspapers and magazines.

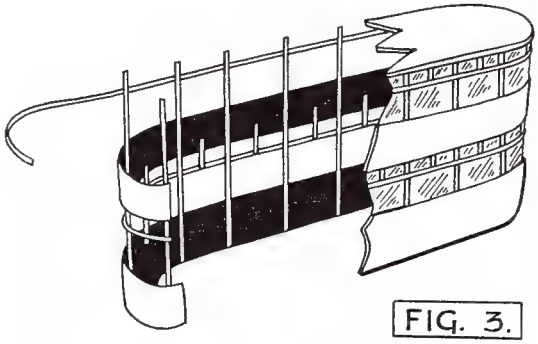
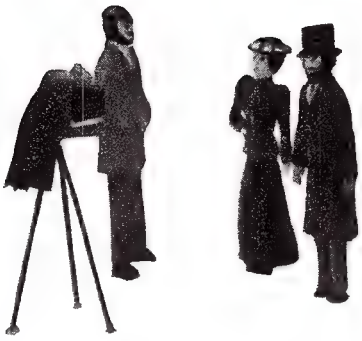


FIG. 3.

Another view of the Craig tramway system.

FUN WITH FIGURES



by A. C. Wehrli and C. H. Millen

Photos and sketches by the authors.

THE possibility of a variation in the use of figures on the layout for adding atmosphere all started when we purchased a box of Slaters' plastics. Now these are excellent in themselves, but by the use of a little ingenuity and a certain amount of muttering under the breath they can be made to give an infinite variety of poses. Of course, no manufacturer could possibly be expected to satisfy every individual requirement, but in these plastics we have the basic figures, which can readily be made to satisfy individual tastes.

Although our own particular layout is in 4mm. scale, at the express request of the RAILWAY MODELLER a number of "O" gauge 7mm. scale figures have been modified, so that unless specifically stated otherwise the following methods apply equally to "O" or "OO" figures.

First decide what is wanted, and choose a figure which most nearly satisfies the conditions you require, then carefully clean the "flashings" from the edges, and reshape any limbs which you may wish to alter. This is done by gently rubbing up and down with a razor blade as in Fig. 1. Now before going farther let us say that while the younger generation may cope without visual aid, those, like ourselves, who though not exactly in their dotage are getting a least a teeny bit long in the tooth, will find things go a lot easier with some form of magnifier, even if it is only the wife's sister's glasses !

Having cleaned and "titivated" the figure, if considerable leg movement is required, before finally reshaping it will be necessary if it is long coated or skirted to cut down the figure in the centre as in Fig. 2, and should a considerable amount of movement in the arms be desired these should be partly cut through as indicated in Fig. 3. This applies to both scales as regards leg movement for walking poses, but the arm movements apply to "O" gauge figures only. It allows the arm when being bent at a later stage to move naturally at the shoulders and elbow, and not move in an unnatural arc. Great care must be exercised in this operation, however, as too deep a cut will cause the limb to break off when being bent to the required shape. "OO" gauge figures should not require this treatment unless the circumstances are exceptional.

The actual method of bending and shaping differs somewhat from that recommended by the manufacturers, and when the following is used the painting must be left to the final stages. Painted figures can, of course, be used, but would require repainting, or at least retouching, afterwards.

The reshaping of the figure is carried out by holding it lightly in a pair of tweezers with plain jaws (not ribbed or the figure will be marked) and allowing it to remain in the steam of a boiling kettle as in Fig. 4 for a short while. It is then quickly removed and the part bent to the new shape. This operation is somewhat tricky when a number of limbs have to be reshaped, as when the second or third is being softened in the steam the first tends to return to its original position. By holding in the steam only the part required to be repositioned, however, this can easily be overcome. The bending should at all times be done gently and progressively, and when the limb becomes at all stiff it should be replaced in the steam. It will tend to return to its original position with the second or third steaming, but will be found to go farther with each immersion.

Having bent the figure to the required shape it will be necessary to fill in the parts that have been cut. This is done by brushing on melted beeswax until the cavity is full, which when cold is correctly shaped by stroking with a razor blade and finally rubbing over with the finger.

Last comes the question of painting the figure. There are several ways of doing this. One can paint as one would a portrait in oils, a method favoured

by Charlie M., or for those who, like myself, lack the Rubens touch the following method may prove helpful. First paint over the beeswax fillings with white paint (this will give a final idea of the finished figure), making sure the fillings do effectively "look right," then, since it is always the smaller areas which prove the most difficult (leaving out the face for the moment), obtain a piece of wood which can easily be held in the hand, then, spiking the figure to be painted with a razor blade in a convenient position, press the other end of the blade into the wood as in Fig. 5. This will allow those with "shaky hands" to hold the figure and brush steadily. Now, taking as an example a white collar round the neck, paint this on, taking care not to run the paint into the neck, but do not worry about what happens below—the top edge is always the easiest. Then, with the base colour of the coat, go over the coat again where the white from the collar has gone below the required level. It is surprising how much easier it is this way. Finally there remain the features. When doing these by far the easiest method in either scale is with a mapping pen as follows. Paint in the flesh colour, keeping this as light as possible, then with the pen and some red and blue ink dot in the eyes and mouth. In order to get the ink to take on the paint a "dotting" or "stippling" action should be used. Hair can also be put in in this way with indian ink, and it proves a more useful method than using paint when painting under hat brims, etc., or for adding braiding to the edges of coats, dresses, etc. Should one make a mistake, by blotting quickly with a piece of blotting paper the ink is instantly removed, and one can start again. It must be stated, however, that unless one is intending to photograph the layout there is little need to worry unduly about the features, particularly in "OO" gauge. To produce a flesh colour from the paints provided, a small quantity of white and a touch of red and yellow will produce the correct colour. Since all three positive primaries plus black and white are included, any colour of shade can be produced for clothing, etc. An essential is a really good fine paint brush, and a useful accessory is a palette for mixing the paint. For this latter we used the lid of a child's paintbox, and if anyone should contemplate doing likewise profit by our experience and clean it out afterwards, in order to preserve peace in the home!

The making of period figures is equally easy, but greater use is made of wax fillings, chiefly in the lengthening of skirts on female figures and the building up of headgear on both sexes. When filling in large areas of wax, do not attempt to arrive at the final shape with the brush; just pile up the wax bit by bit, allowing one coating to set before applying the next, and so on until sufficient wax has been added to cover the required area, then whittle away with a razor blade until the shape is roughly correct, scraping the wax to get the final finish. The scraping action is best described as a stroking motion, similar to that used by certain housewives when removing the skins from potatoes, as opposed to peeling them. Having completed this, a gentle rub over with the finger will smooth the surface.

The general points relating to the decade 1880-1890 are shown in Fig. 6, those for the period 1890-1900 in Fig. 7, and those for 1900-1910 in Fig. 8. Male figures changed little during this latter period, so these are not included in the latter sketch. We would strongly recommend those with pre-group layouts to obtain a copy of *English Costume* by Doreen Yarwood, published by B. T. Batsford Ltd., London, if they wish to keep their layouts both authentic and varied. This book covers all periods to the present day and gives, in addition to the vast number of sketches, written information as regards colour schemes of the day. Early photographs are also of considerable value. Information regarding railway uniforms we have been unable to obtain, apart from a few early photographs. Perhaps some reader can inform us where this is available.

FUN with FIGURES

For details see text

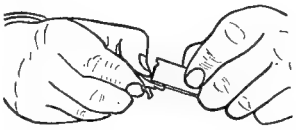


Fig. 1. Reshaping limbs.

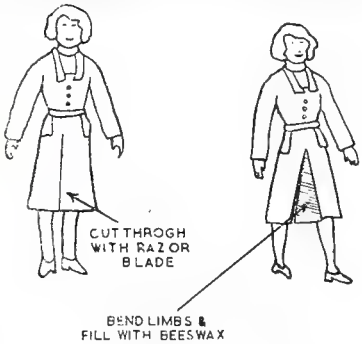


Fig. 2. Skirted figures.

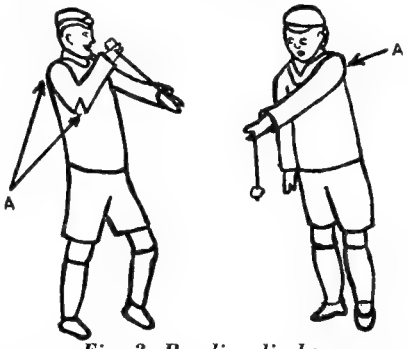


Fig. 3. Bending limbs.

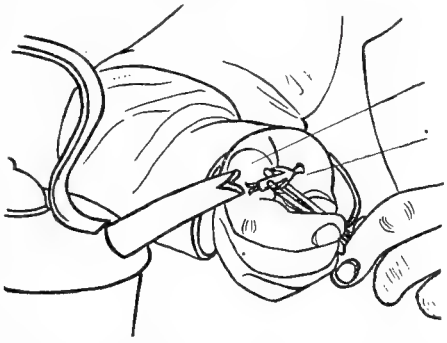


Fig. 4. Steaming.

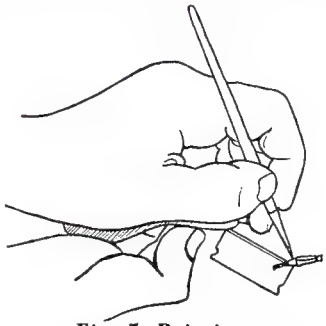


Fig. 5. Painting.

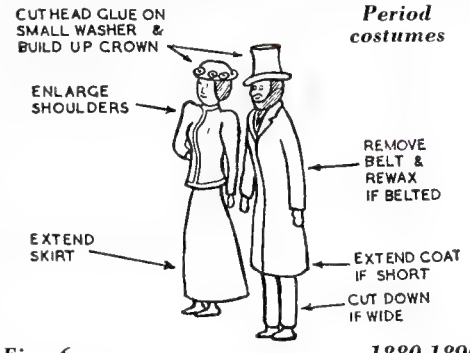

CUT HEAD GLUE ON SMALL WASHER & BUILD UP CROWN
Period costumes
ENLARGE SHOULDERS
REMOVE BELT & REWAX IF BELTED
EXTEND SKIRT
EXTEND COAT IF SHORT
CUT DOWN IF WIDE

Fig. 6. *1880-1890*

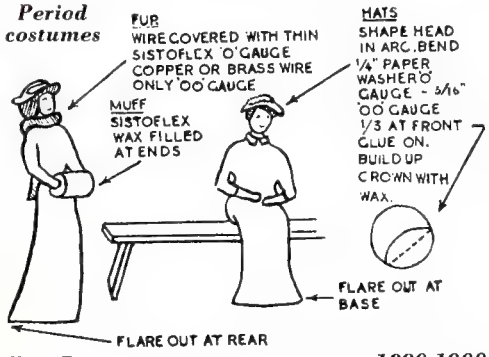

Period costumes
FUR
WIRE COVERED WITH THIN SISTOFLEX 'O' GAUGE COPPER OR BRASS WIRE ONLY '00' GAUGE
MUFF
SISTOFLEX WAX FILLED AT ENDS
HATS
SHAPE HEAD IN ARC. BEND 1/4" PAPER WASHER 'O' GAUGE - 5/16" '00' GAUGE 1/3 AT FRONT GLUE ON. BUILD UP CROWN WITH WAX.
FLARE OUT AT BASE
FLARE OUT AT REAR

Fig. 7. *1890-1900*

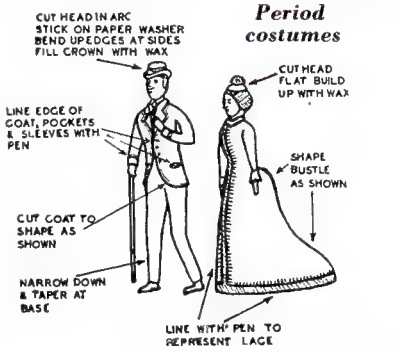

CUT HEAD IN ARC STICK ON PAPER WASHER BEND UP EDGES AT SIDES FILL CROWN WITH WAX
Period costumes
CUT HEAD FLAT BUILD UP WITH WAX
LINE EDGE OF COAT, POCKETS & SLEEVES WITH PEN
SHAPE BUSTLE AS SHOWN
CUT COAT TO SHAPE AS SHOWN
NARROW DOWN & TAPER AT BASE
LINE WITH PEN TO REPRESENT LACE

Fig. 8. *1900-1910*

Do It Yourself No. 9

TURNING CHIMNEYS FROM WOOD

by D. King

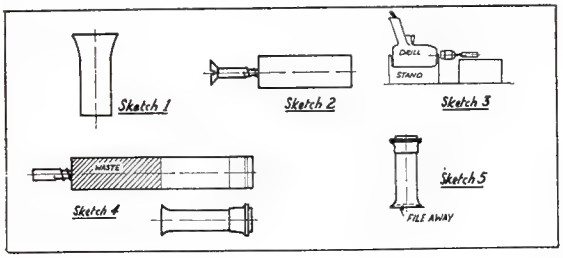
I HOPE this article will be of interest to readers, and in particular to would-be modellers of pre-grouping locos. Normally, unless you are the proud possessor of a lathe and have the skill to use it, you are either turned off building some particular old loco because of being unable to get the chimney and dome ready-made or you have to order them to be made specially for you. I did this when building my first Highland Railway engine. After placing the order I started building, and although it was promised within a fortnight I had finished the loco and tender long before it was ready. Thereupon I made up my mind that I would not be in that position again. Luckily I found a friend who could do my turning for me, but if I had not I would probably have thought of this idea earlier.

A few months ago I bought a Black and Decker electric drill and a horizontal drill stand, and one day, while using it, hit on the idea of turning a chimney out of wood.

Take a piece of round wood dowel of a slightly larger diameter than the finished chimney and cut off about 1in. to 1½in. Now the drill has a ¼in. chuck, and as my dowel was ¼in. diameter I had to find a way to fit it into the chuck. I tried thinning one end, but it would not run truly when I started turning, giving the result as shown in sketch 1.

I then found the exact centre of the dowel and screwed in a one-inch wood-screw (see sketch 2). After cutting off the head of the screw, the shank was inserted into the chuck and I found it then turned truly. The drill was placed in the drill stand, which is screwed to my work-bench, and a metal tool rest was also fitted to the bench (see sketch 3).

The only tools required are a number of different-shaped needle files (flat, round, half-round and triangular are all I used). A Vernier gauge or a pair of outside calipers is also needed to check the outside measurements. Mark out the dowel with a pencil,



taking the measurements from the blueprint (see sketch 4), but always add about 3mm. to the overall length at the flared skirt end, to allow for filing the wood away to fit the smoke-box barrel (see sketch 5).

When starting turning, hold the triangular file against each pencil mark until a slight cut has been made, then take a flat file and turn the narrowest part down until it is almost the correct diameter. (The narrowest part is usually the piece above the skirt and under the collar.) If this is done it helps to get the gradual flare to the skirt, which is turned next. After that continue to work upwards towards the top of the chimney, checking periodically to see that it is still turning truly, and not taking more off one side than the other.

When the dimensions are all correct and you are satisfied with the look of it, use a fine sandpaper to smooth it down. Remove from the wood-screw and cut off the surplus dowel. Then file the base to fit the smoke-box, as shown in sketch 5. It helps if you place it on the smoke-box and use that as a guide. The next step is to drill the hole through the centre of the chimney. I always hold the chimney with my fingers and start with a fine drill, working up to the larger ones until the hole is large enough. I find it is safer if you hold it in this manner, as no damage can be done to the chimney, and you have more control over it if the drill is not running straight through.

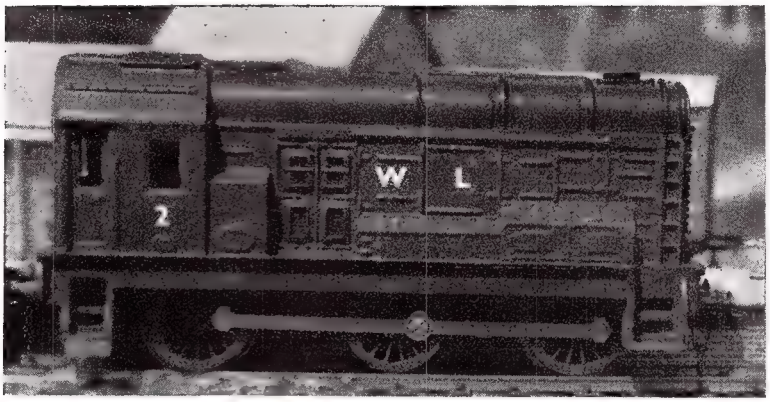
After thoroughly sandpapering it give it a coat of black paint, allow this to dry and then sandpaper and paint again. When this is dry it is very difficult to tell that it is made of wood and not metal. Of course, if the loco has a chimney with a copper cap, this idea is not much good.

The method I use to fix the chimney to the loco is very simple. I wanted to replace the chimney of a G.N.S.R. loco which had been in service for some time, and did not want to spoil the paintwork. A quick twist with a pair of pliers took the old one off, and I glued the new one on with Croid. This has held ever since, even with considerable pressure applied. Of course, if I were fitting one while building a loco I would fit a 10 B.A. bolt through the chimney and bolt it to the smoke-box.

I have not attempted to turn a dome from wood yet, but I think it could be done in much the same way as the chimney. Anyway, if any reader has got an electric drill he can always have a try at making one. After all, the cost of dowelling is only a few coppers a foot, and even if the result does not satisfy at first, I think he will enjoy it; I know I did.

REBUILDING A TRI-ANG DIESEL SHUNTER

by Alan Wright

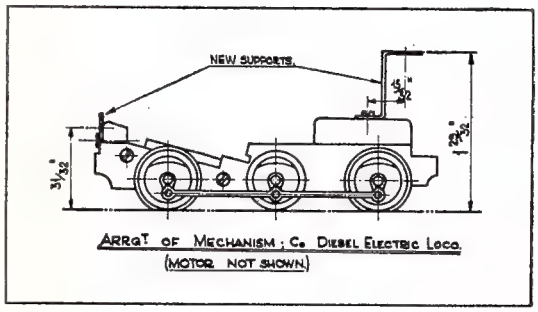


TRI-ANG locomotives are sometimes despised by the "scale fraternity" as being toy trains, yet the motor units fitted to these locomotives are equally as good as some of the more expensive products, are very reasonably priced, and can fill gaps in many a model railway locomotive stud. The amount of detail that is incorporated in the body moulding is quite remarkable. Recently a six-coupled diesel-electric locomotive has been added to the Tri-ang range. Based on the British Railways 13XXX standard shunter, the design has been modified to utilize the same mechanism as the "Jinty." Due to this, the model is longer than the prototype and has inside frames. When purchased the diesel locomotive is higher than other locomotives and with the rear coupled wheels set back under the cab an ungainly appearance results. I have added one of these locomotives to the "Wright Lines" stud, and before putting it into service decided to alter it to improve its appearance.

To lower the body, it is necessary to reverse the chassis, enabling the middle wheels to clear the underside of the footplate. Modifications are necessary to the frame (see diagram). It is best to remove the motor so that filings and other "swarf" do not interfere with the future running. The ends of the frames are cut flush as shown and two new support brackets provided. That behind the motor requires a $\frac{3}{32}$in. diameter hole drilled through the casting for the 8 B.A. securing bolt and $\frac{1}{16}$in. diameter holes drilled as shown are tapped 8 B.A. for the body securing bolts. Through the centre of the exhaust orifice on the engine casing top, a $\frac{3}{32}$in. diameter hole is drilled and subsequently countersunk. On my locomotive $\frac{1}{32}$in. diameter holes were drilled through the buffer beams, then elongated with a piercing saw blade to take the three-link couplings. The coupling-hook shanks are trimmed and bent over flush with the buffer beam, a dab of balsa cement locking them in place. On the Wright Lines, the three-link couplings are used only between locomotives when double heading (or should it be in this case "working in multiple").

As I do not care for alloy wheels, I decided to rewheel the locomotives, using Hamblings 18mm. diameter driving wheels. Using one Tri-ang frame plate as a pattern, two new frames were cut from $\frac{1}{16}$in. hard brass. The axle holes were drilled $\frac{1}{8}$in. diameter, great care being taken to ensure that they were all square to the frames. The necessary holes for securing were marked from the originals and drilled, countersunk or tapped, and the frame was re-erected, using the Tri-ang frame spacers. As the worm wheel suits a $\frac{5}{32}$in. diameter shaft and Hambling axles are $\frac{1}{8}$in diameter, a small "circlip" about $\frac{1}{4}$in. long was cut from a suitable sized brass tube and then soldered to the axle. This sleeve was rubbed down with emery tape until it would just enter the hole in the worm wheel. The axle was then gently tapped into place and the worm wheel centred in position and soldered to the axle. The wheels were pressed on in the normal manner, a Peco insulated washer being slipped on between the wheel and the frame. When on their axles, the Hambling crank pins were carefully unscrewed from the wheels, and on the outer wheels the holes were opened out to $\frac{1}{16}$in. diameter. The Tri-ang crank pins were trimmed in length and the coupling rods fitted. As I prefer my locomotives to have a completely isolated chassis, new collectors were fitted. The Tri-ang collectors were removed, two extra holes drilled in the insulated carrier and short lengths of nickel-plated bullhead rail bolted in place with 12 B.A. countersunk bolts. To these rails, nickel-silver wire collectors bent to a suitable shape to bear on the tyre backs were soldered. The motor leads were taken from the collector rails to the brushes. The insulating sleeve was halved, a piece being used behind each brush, and finally the suppressor was soldered across the brushes. To complete the rebuild for the Wright Lines, the locomotive was repainted green, the cab roof, bonnet top, ladders and footplates were painted matt black, and white transfers, W.L., were fixed to the bonnet sides, also a numeral on the cab sides.

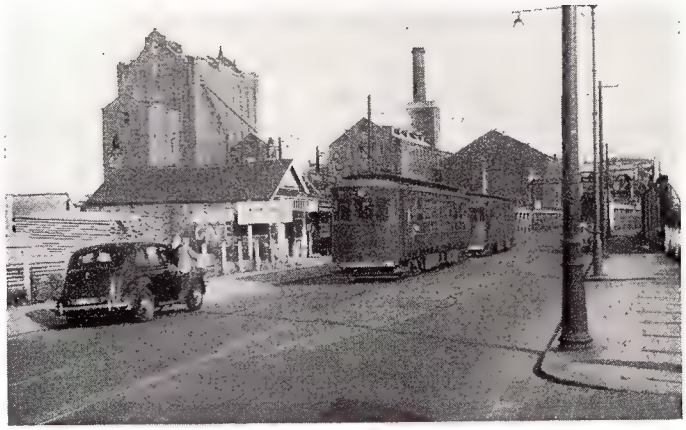
Such a locomotive can be converted (apart from painting) very quickly, and with the mechanism reversed to improve the appearance makes a cheap but reliable addition to any layout.



Prototype of the Month

THE GRIMSBY AND IMMINGHAM TRAMWAY

by P. I. H. Green



Grimsby terminus.

As we go to press, we hear that the section between the Grimsby terminus and Cleveland bridge has been closed to traffic.

HERE is a prototype that is different. It offers a great deal of scope to the scenic modeller, apart from its immediate appeal to the tramway enthusiast. A small section could be fitted into that odd corner of the railway layout to provide that "something" that is out of the ordinary.

The railway was built in 1910-11 by the Great Central Railway, to provide transport from Grimsby for men working at the newly opened Immingham Docks. It was taken over by the L.N.E.R. in 1922 and is now operated by British Railways.

There is an assortment of trams working the line. Some of the original G.C.R. vehicles are still operating, while three which came from Newcastle-on-Tyne in 1948 are lying semi-derelict in a siding at the depot. The most numerous are the ex-Gateshead trams, which were acquired in 1950. All, or nearly all, are now in British Railways green livery, although the three semi-derelicts are still in L.N.E.R. brown. No. 34 ex-Gateshead type has recently been rebuilt as a repair car, and is now B.R. No. DE320224.

The Grimsby terminus is close by the Alexandra Dock, which handles timber. An effective background is formed by Spiller's mill, while the scenic modeller has a great deal of scope with the timber yards, complete with sheds, sawmills and all the minor details that a model such as this needs. The terminus building is a small wood structure, with a wealth of detail. Its present colouring is brown and cream.

From the terminus, the single line with passing loops runs as a tramway for about a mile and a half down Corporation Road. This section could be neatly modelled in low relief, as the majority of buildings are small shops, which give way to terrace houses on the outskirts of the town. The line follows the road over Cleveland bridge—a notorious local blackspot—to cross over the West Marsh railway sidings, and then leaves the road to become railway track. Just after this it passes the railway's depot at Pyewipe, where there are workshops and storage sidings. These are near an industrial estate with several factories of various sizes that could be modelled as background, low-relief or more fully as space permits.

The depot lies alongside the Grimsby Docks—Immingham Docks mineral railway, and the trams run parallel with this for the next four and a half miles through flat agricultural land as far as Immingham halt. Here a reversal is necessary, which causes congestion at busy times, and double tracks lead to the Immingham Docks terminus.

Previously, the single line continued from the halt as far as Immingham Town, about a mile away, but after several years disuse this section has recently been taken up.

At the halt the line again joins the road, which the double track follows for about half a mile, only to become rail track again for the last three-quarters of a mile along the Humber bank to the dock terminus. Here there are two crossovers, as shown on the diagram.

The passing loops are operated by spring-loaded points, while the crossovers at Immingham and the depot points are worked by hand levers. From the modeller's point of view this is simplicity itself.

There is a large oil storage depot and installation beside the Immingham end of the line, complete with unloading jetty in the river. As with the timber yards at Grimsby, this provides useful scenic detail, while a background of ships' funnels, masts and superstructures, together with transit sheds and cranes, could easily lend the right atmosphere.

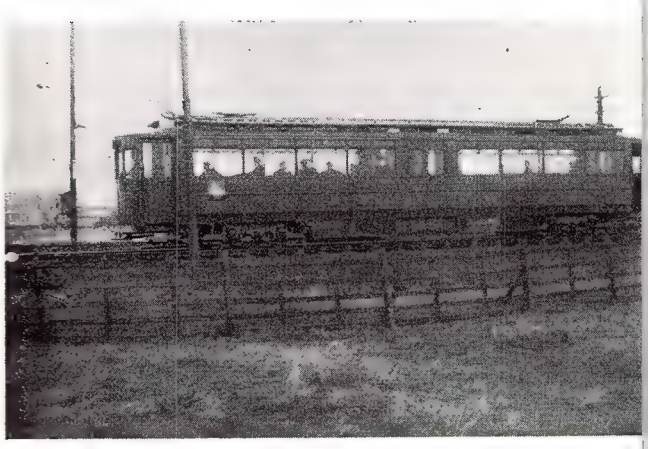
There are two road crossings, one at Great Coates and the other at Kiln Lane, Stallingborough. Both are rather different in style, though neither has gates. In both cases balsa strip could be used very effectively. At Kiln Lane there is a modern-style concrete shelter.

Power supply is by overhead catenary, carried in Grimsby by tramway-type standards, by rolled-steel girders on the railway section, and by round concrete standards on the Immingham Dock section.

There is no signalling, as tramway rules apply over the whole system.

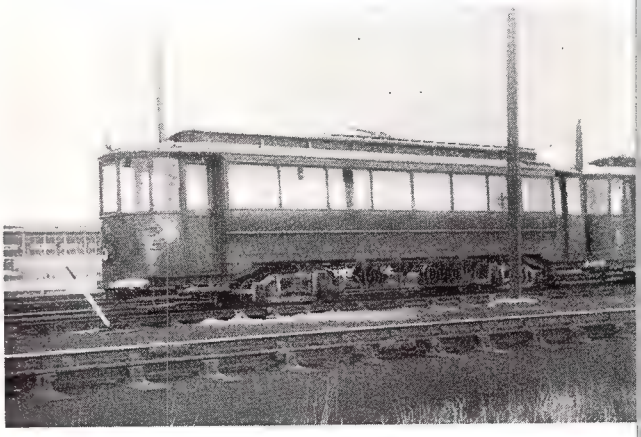
On the tramway sections the ride is rather rough, to say the least, and one wonders if Emmett's elliptical wheels are really based on fact!

A typical road crossing.

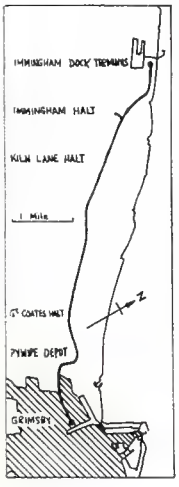


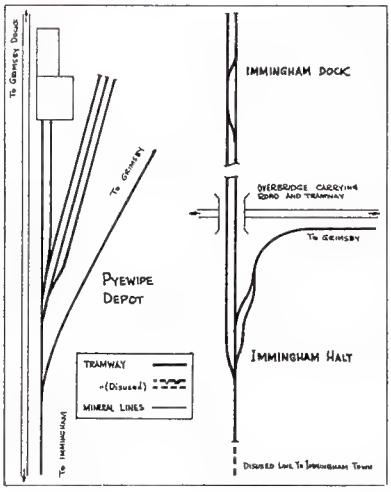
Original pattern car.

Ferro - concrete trolley poles on the main line. Meat skewers would be about right for a "OO" model!

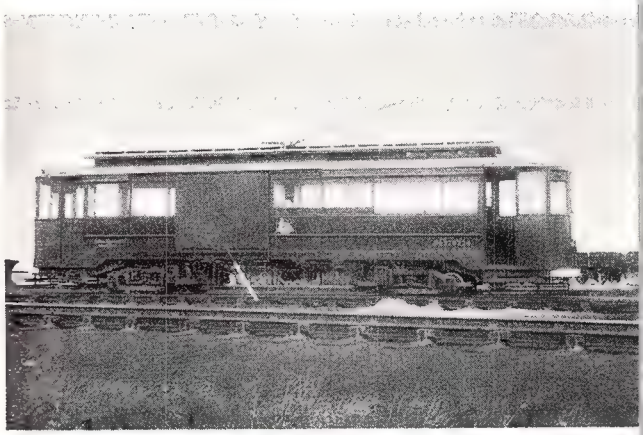


Ex-Gateshead car.



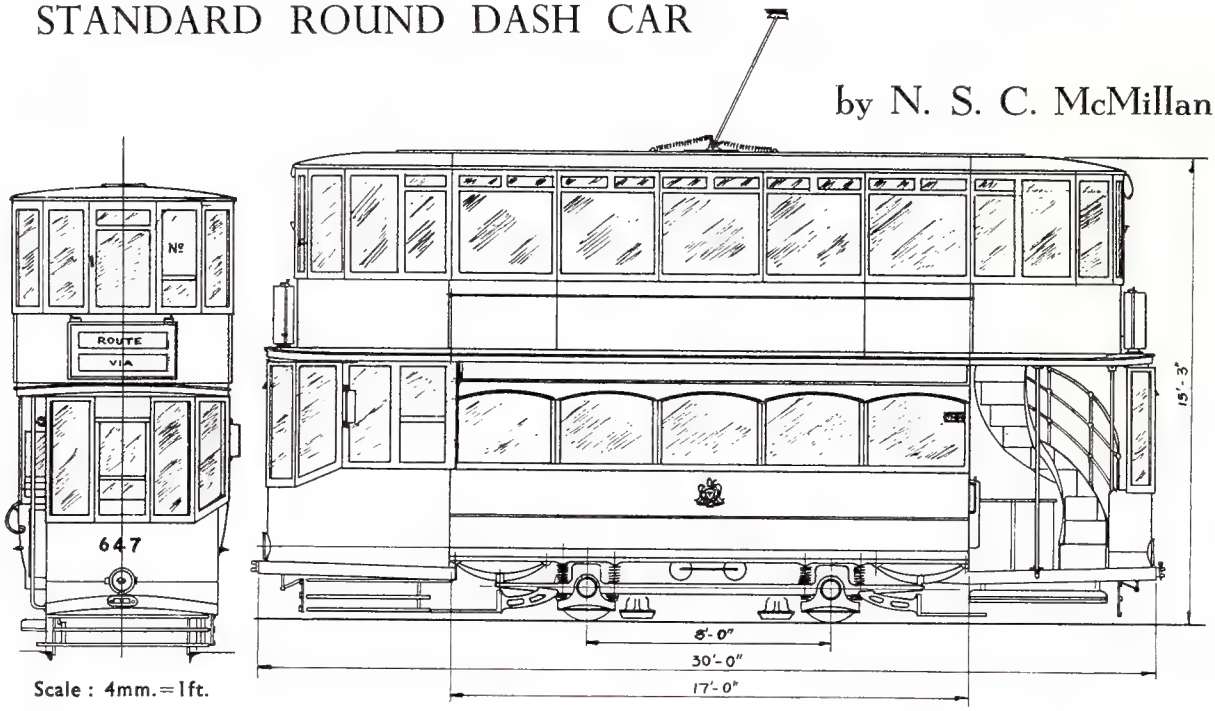


Ex-Gateshead car as work vehicle.

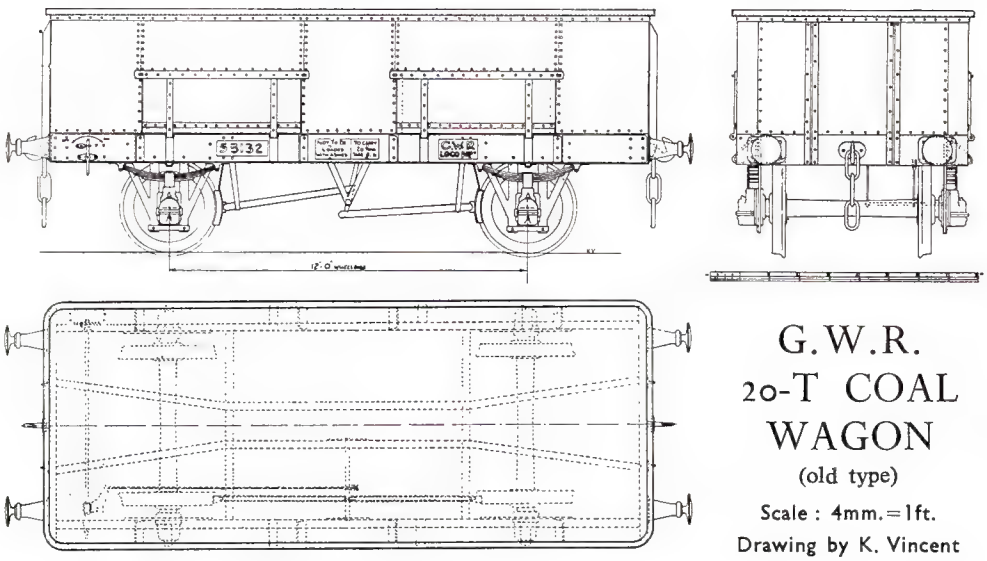


GLASGOW CORPORATION TRAMWAYS STANDARD ROUND DASH CAR

by N. S. C. McMillan



Scale : 4mm.=1ft.



G.W.R. 20-T COAL WAGON

(old type)

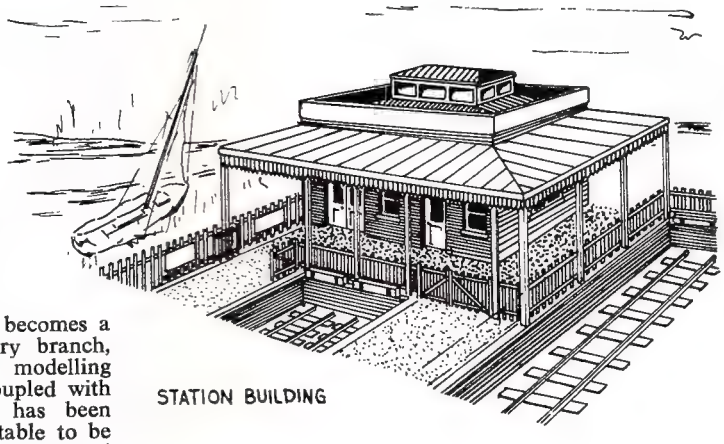
Scale : 4mm.=1ft.

Drawing by K. Vincent

All " Railway Modeller " drawings may be photostated to any scale for non-commercial purposes.

Layouts for the Modeller
No. 92

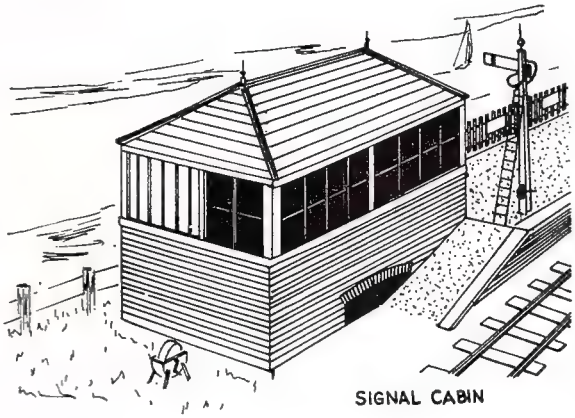
AN OUTER SUBURBAN TERMINUS



STATION BUILDING

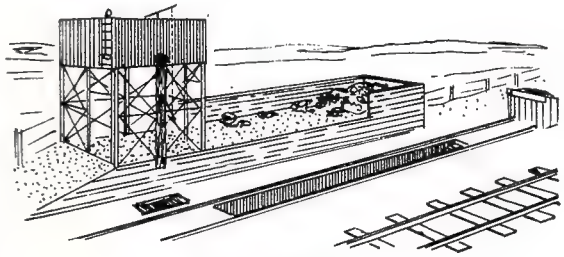
NOW that there are a selection of suitable "OO" gauge proprietary tank locomotives and three ranges of proprietary suburban coaches on the market, the outer suburban terminus becomes a really practical alternative to the country branch, offering much the same advantages for modelling but providing a more intensive service coupled with a double-track main line. The layout has been designed to allow a really intensive timetable to be worked, provided a spare loco is to hand to speed reversal—hence the large number of dead-end electrical sections on the plan. The principle is, of course, that the train arrives at any of the platforms, the loco is detached and held, dead, on the end of the terminus road while another tank, which has been standing by the coaling stage, being watered, coaled and generally checked over, backs on to the train. After the train has departed, the original loco runs to the coaling stage to await the arrival of the next train.

As drawn, a length of twelve feet is needed for "OO" gauge. This will comfortably handle four-coach trains, but this length can be slightly reduced or considerably extended. To save space the loop and sidings can be on a curve; a 90° turn on a 36in.-radius main line will be ample for this purpose. Moroever, by sacrificing the carriage siding, eliminating the main line loop, which can be used for reversal when no spare loco is available, and closing up the goods sidings, still more space can be saved. Last of all, by fitting two slip points in place of the ladder crossovers some eighteen inches will be gained. Whether this is worth while depends entirely on your attitude to complicated pointwork. Normally platform 3 is used for goods arrival and as a head-shunt, though there is sufficient room for limited shunting to be carried out in the yard without fouling this road and provision is made, by means of an additional electrical feed, for this to be done.

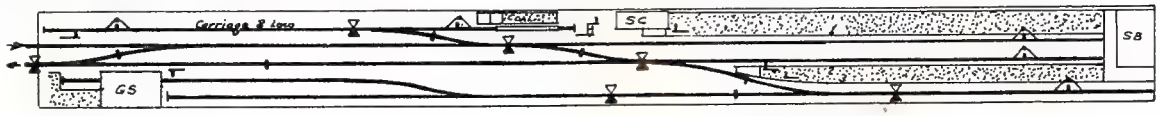


SIGNAL CABIN

The layout is particularly suited for timetable operation, and because it is so straightforward would suit the special needs of exhibition working. To simplify matters the coaching stock can be arranged in semi-permanently coupled rakes, but variety can be obtained by adopting a standard three-coach formation of brake-third, first-third, third-brake, with an additional coach coupled to strengthen the rake for rush-hour working. This, plus some van workings (the empty vans can be stored at the end of platform 3), will prevent the passenger operation from getting monotonous. Goods working will be very simple, and consist mainly of coal, with a desultory traffic in bricks, timber and other builders' supplies, there being no large industries in the town.



LOCO COAL, WATER AND INSPECTION



JUNIOR MODELLER

FRONT COUPLINGS FOR TRI-ANG LOCOS

TRI-ANG enthusiasts have probably noticed that this year's Pacific models are fitted with front couplings. This useful fitting can be added to all previous patterns by fitting the new replacement front bogie, which can be supplied by the manufacturers for 2s. 5d., plus 4d. post and packing. No allowance can be made for old pattern bogies.

Rovex Scale Models have kindly supplied us with details for the simple conversion technique.

1. Remove existing front bogie by undoing bogie-securing screw (Fig. 1). *Do not lose screw.*

2. Remove body by undoing securing screw located in funnel.

3(a). For *"Princess Elizabeth"* locomotives cut or break off the front steps from the body and file away part of the buffer beam up to the bottom of the buffers to allow the new bogie to swivel (Fig. 2). Steps are fitted to replacement bogie X.35.

3(b). For *American*-type locomotive remove cowcatcher as shown in Fig. 3. A fretsaw is the best tool, but the job can be done quite easily with a pair of pliers and a file. A cowcatcher is fitted to replacement bogie X.33.

4. Early models had two lugs extending downward at the front end of the main frames. These should be filed flat as indicated in Fig. 4.

5. Replace body on chassis, ensuring that the securing tongues at the rear of the chassis are located correctly in the body.

6. Fit new bogie.

If difficulty is experienced or anticipated in modifying the body, replacement bodies of the new pattern can be obtained.

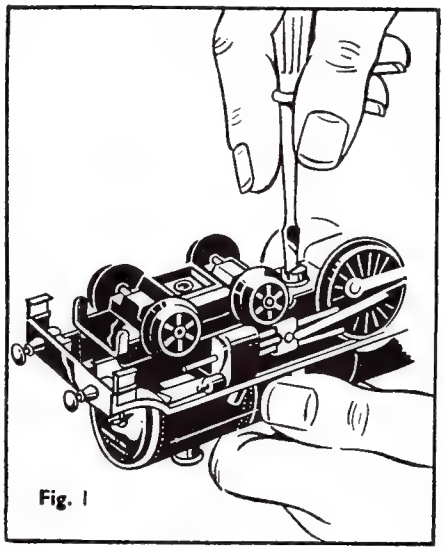


Fig. 1

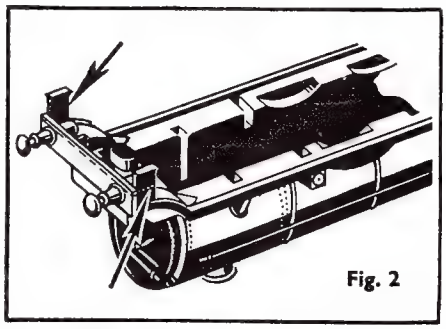


Fig. 2

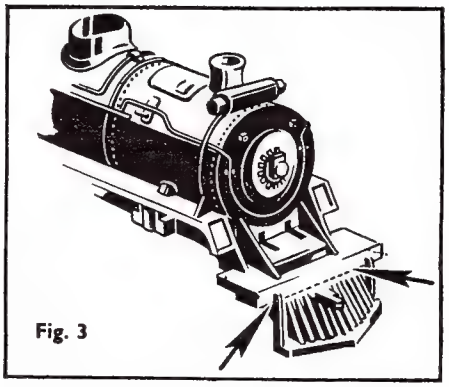


Fig. 3

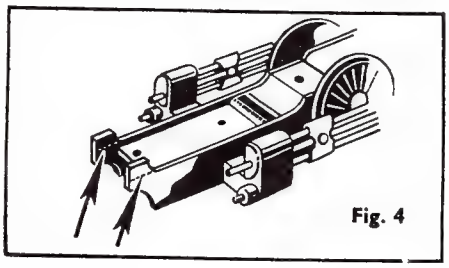
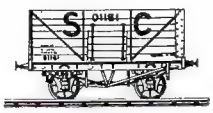


Fig. 4

VEHICLES AND THEIR USES

PRIVATE OWNER WAGONS



IN this series we propose to describe the purpose and use of the various vehicles that are to be found on our railways. We begin with the private owner wagon, once a common sight on all main line trains, but now almost a thing of the past.

The privately owned wagon falls into three main groups: the mineral open, owned principally by collieries and coal dealers; the tank wagon for bulk transport of petrol, oil, etc.; and the special wagon for the transit of chemicals and similar loads for which a common user wagon cannot be used. The former category, once the largest in point of numbers, was swept away by nationalization, but the other two types remain to add a welcome splash of colour to our goods trains.

Originally a private owner wagon was worked back empty to its home station, and would thus only be found with its specified load, but, due to the expense of this empty mileage, pooling arrangements were reached before the war, so that P.O. wagons would be found with a variety of loads. In addition, firms such as Stephenson Clark (S.C.) leased their wagons to individual concerns which had temporary need of such vehicles, and thus these wagons would contain a variety of loads.

The P.O. wagon was regarded as an advertisement, and although no British vehicle ever reached the heights (or depths) of the American "reefer," probably because the smaller side offered less scope for embellishment, colourful liveries were the vogue, and the wagons were generally to be found in excellent repair. Today, alas, the survivors, which have their number prefixed by a P, show but vestigal traces of their former colours, while it is not unheard of to find that a wagon has been repaired with planks from two or more vehicles, providing a problem in patchwork for the student.

USE A BASEBOARD

ALTHOUGH sectional track is normally laid afresh each operating session, this does take up valuable time, not to speak of risking damage to the track sections. If a simple baseboard, some three feet wide by four feet long, is made, by framing up a piece of softboard, which costs about 6d. a square foot, with planed 2in. by 1in. cross battens at 1ft. intervals, the track can be secured to this with ordinary household pins. A fixing of this nature is extremely firm, but individual sections can be removed by gently prising them away from the baseboard and removing the pins with a pair of pliers. Thus the layout can be modified as desired, but it always instantly ready for running.

The controllers and switchgear can be permanently screwed to one corner, and all wiring neatly pinned to the baseboard with pins, the heads of which are cut off and the top bent to form a small staple.

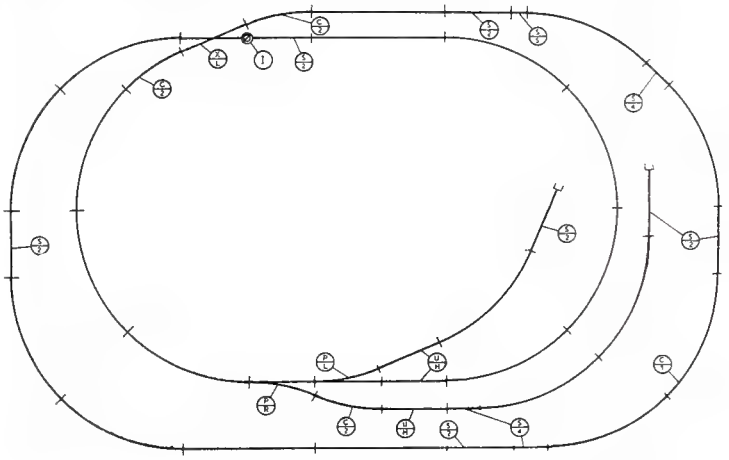
Roads, fields, etc., can be painted on the surface with poster colours, even if more ambitious scenic work is not attempted. Small model road vehicles and buildings can be placed in position before running.

The complete layout can be stored against a wall, or under the bed, while rolling stock and other portable accessories are best kept, in the manufacturers' cartons, in a convenient cupboard or drawer.

With a baseboard your sectional track will last longer, and remain in mint condition indefinitely, thus preserving its full value, yet provided softboard—and only softboard—is used as a top surface, you can change your plan as often as you wish.

JUNIOR MODELLERS! WRITE TO JUNIOR MODELLER
about your railway, your problems, your ideas. This is your section.

SECTIONAL TRACK PLANS No. 1



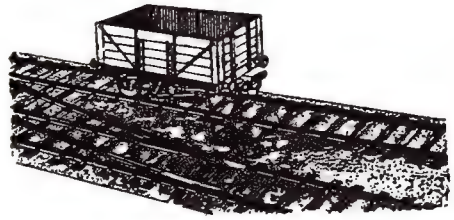
Materials required for this layout

Key on Drawing	Type of rail	Quantity
—	Full straight	4
S/2	Half straight	7
S/4	Quarter straight	3
S/S	Short straight	1
—	Full curve	17
C/T	Curved terminal rail ...	1
C/2	Half curve	3
U/H	Uncoupler rails	3
P/R	R.H. point	1
P/L	L.H. point	1
X/L	L.H. crossing	1

If hand-operated isolating points are used, an isolating tab will be required at !

For Hornby Dublo sectional track

Peco Topics



CHANGE TO SCALE TWO-RAIL

Part 3

Sidings and Loops

LAST month we dealt with comparatively simple pointwork where all points were facing in the same direction. This simple state of affairs does not always follow; in fact on the average layout points are to be found facing in all directions. However, the basic rule of feeding to the toe of the point system and placing a break in the main line only after each point system, to isolate it from any other feed, still holds good. In Fig. 5 we have the elementary case where points are facing in both directions from a common origin, and thus one feed point only will supply both sets of points; but, as breaks appear in the main line in both directions, additional feeds will be needed beyond these breaks. However, if you imagine Fig. 5 as forming the only pointwork on a wholly continuous layout, it will be seen that one break only in the main line is necessary.

Fig. 5

Fig. 6 again shows points facing in opposite directions, but here they are arranged differently from the previous case, and a pair of feeds are needed, one for each point system, with a break placed between the two systems as shown. Once again, if this forms part of a continuous layout the cases in Figs. 5 and 6 are actually identical.

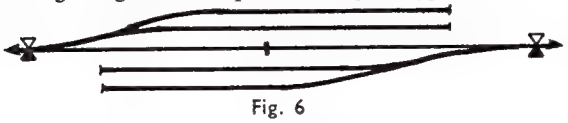


Fig. 6

In Fig. 7 we introduce the crossover. This is a very common track formation, and as it is always wired up in exactly the same way it is useful to be able to recognize it no matter how it is formed, as this will usually, by virtue of the associated point systems, comprise the majority of the wiring on a model railway. It will be seen that the feeds are taken on the two parallel tracks just before each point, that a break exists in both rails on the crossover track joining the two roads, and that further breaks exist in the usual fashion along the main line.

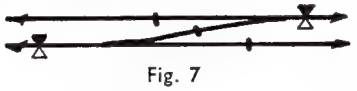


Fig. 7

Fig. 8 shows a more complex arrangement of point-work, involving crossovers. To round off the matter we have Fig. 9, which shows the basic arrangements for a passing loop. Feeds are taken in each end of the loop and rail breaks exist in the centre.

Fig. 8

Fig. 9

The cases given above cover all straightforward two-rail wiring arrangements, and in fact only the special cases of triangles, reversing loops, diamond crossings and slip points remain to be dealt with next month. Before going on to these comparatively rare items it would be as well to deal with a very common query, that of running two trains on a layout.

Contrary to popular belief, no special electrical circuits are needed. The first requirement is another controller and power supply; the second, and most important, requirement is a layout suitable for operating two trains at once. The simplest arrangement of this is a double-track main line, but in addition to this most obvious of cases there are the single-track point-to-point system, where each terminus may be controlled separately; the goods yard with a head-shunt on which shunting can take place without fouling the running tracks; and the rather rare case of the very long main line which can be broken up into separately controlled sections of worthwhile lengths. As these in "OO" gauge should not be much less than ten feet, it will be seen that these cases can profitably occur on only the largest of layouts.

As the rules given above already isolate every feed from its adjacent sections by means of breaks in both rails, no difficulty will occur if one section is fed from a different controller, but for additional flexibility in control the system known as cab control may be adopted at some future date. It is, however, as well to point out that the arrangements given above do not in any way preclude the future use of elaborate control systems.

CLUB NOTICE BOARD

featuring popular personalities and society news

Personality Parade No. 57

M. E. J. Deane

Bristol Railway Circle
Stephenson Locomotive Society

Maurice Deane, after spending his youthful days almost in sight of the main Great Western Railway line at Reading in the era of the De Glehn compounds and the famous "Great Bear," naturally formed a lasting affection for that great line. Side by side with prototype interest developed a Hornby layout, which continued in operation until the break with home came upon entering a banking career.

Fortunately, except for a period in the late Great Eastern Railway's territory in East Anglia, he has always been able to continue his Great Western interest, which, as the years have passed by, has turned more and more to the attractive branch lines always associated with that system.

A break of nearly six years in World War II, partly served on the Continent, and pre-war holiday travel enabled him to broaden his railway interest, and upon demobilization an opportunity, gladly grasped, arose for a return to G.W. territory, this time to the West Country.

Eventually a start was made on serious modelling, resulting in a free-lance G.W. branch layout, which after the discovery of the attraction of the Culm Valley branch in Devon was rebuilt to follow this prototype, and this layout in 4mm. 16.5 gauge remains extant.

Parallel with the G.W. interest Maurice has always had a leaning towards the minor railways in the United Kingdom, particularly the narrow-gauge systems, which has resulted in considerable experimental work being done in producing minimum-space layouts to give a fair representation of the prototype chosen. Progress to date has been a model of the Rye and Camber Tramway, already described in the RAILWAY MODELLER, and the project nearing completion is a Welshpool and Llanfair layout in 5mm. scale.

A keen railway photographer, Maurice also finds the time for activities with both the Stephenson Locomotive Society and the Bristol Railway Circle.

NOTES AND NEWS

Copy for these columns must be received five weeks before publication.

MERSEYSIDE MODEL RAILWAY SOCIETY

The Merseyside Model Railway Society will be holding its second model railway exhibition at the Bluecoat Chambers, School Lane, Liverpol, on September 26, 27, 28 and 29 next. The 16.5, "EM" and "O" gauges will be represented by working layouts.

Neighbouring clubs have promised to provide static stands, and a display of models on loan from British Railways, together with a film show, will all help, it is hoped, to surpass the first show the society presented to Liverpool in 1952. On this occasion 12,000 of the public paid to see its efforts.

The Hornby Dublo layout is being shown by Meccano Ltd. This is probably the finest layout of its kind in the country today.

By the time the final arrangements are made, it is hoped that the live steamers will be providing rides for the children.

Prospective members and all correspondence should be addressed to the hon. secretary, Mr. N. F. Weatherley, 32 Arkles Lane, Anfield, Liverpool 4.

TALYLLYN RAILWAY PRESERVATION SOCIETY

Talyllyn Railway. There is another opportunity of visiting this historic railway on September 22, when a special train will leave Paddington at 8 a.m. approximately, calling at Greenford, High Wycombe, Birmingham (11 a.m.) and Shrewsbury (12.20 p.m.), arriving Towyn 2.50, after which there will be a trip over the T.R., and, for non-members of the T.R.P.S., in the evening, a film show. Return trip starts at 11.15, arriving back in London at 5.55 a.m. (Sunday). The loco from Shrewsbury to Towyn will be an ex-S.E. & C.R. "D" class 4-4-0, piloted where necessary by the sole remaining Dean goods 0-6-0. It is hoped that part of the rolling stock will be of vintage variety. Fares, including tips, etc., London 50s., Birmingham 25s. 6d., and Shrewsbury 17s. 6d., plus 3s. in each case for non-members of the T.R.P.S. This is also an opportunity to visit the recently opened narrow-gauge museum.

Full details, order form, etc., will be sent, on receipt of s.a.e., by Mr. T. W. Robertson, 23 Portway, Ewell, Surrey.

NORTHOLT MODEL RAILWAY CLUB

The annual general meeting was held on July 11 and the following officers were elected: president, Mr. Manning; secretary, Mr. J. F. Matthews; treasurer, Mr. R. Weal.

A vote of thanks was proposed to Mr. Turner, the retiring secretary, for the good work he had done in the past four years. He has decided to "stand down" this year, but will still retain an active interest in the club.

Further improvements and advancements were suggested for the club's "OO" gauge stud-contact layout, and these have been taken in hand immediately prior to the club's annual exhibition on its premises on September 8. Inquiries to the hon. secretary, Mr. J. F. Matthews, 63 Hunters Grove, Kenton, Middx.

THAMES VALLEY MODEL RAILWAY CLUB

The above recently formed model railway club is now in operation, and meetings are held at Stanley Road Secondary Modern Schol, Teddington, Middlesex.

On Sunday, September 9, a visit has been arranged to Captain Warrell's gauge "1" model railway.

Inquiries will be welcome from any enthusiast in the district, and these should be made to Mr. L. V. Weeden, 27 Cranmer Road, Hampton Hill, Middlesex.

SEPTEMBER MEETINGS

BIRMINGHAM MODEL RAILWAY CLUB
13 Open meeting.
19 16.5mm. layout construction.
27 "EM" layout operation.

FYLDE MODEL RAILWAY SOCIETY
4 "The Blackpool Trams" (Mr. S. Holt).
18 Open night.

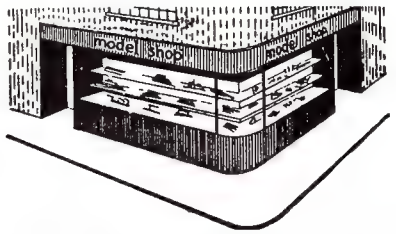
HISTORICAL MODEL RAILWAY SOCIETY
24 Exhibition of members' models, and rummage sale.

HODDESDON AND DISTRICT MODEL RAILWAY SOCIETY
12 "Power Packs" (L. Squires).
26 Layout construction.

WIMBLEDON MODEL RAILWAY CLUB
12 Photographic night.

TRADE WINDOW

News and Views of Trade Interest

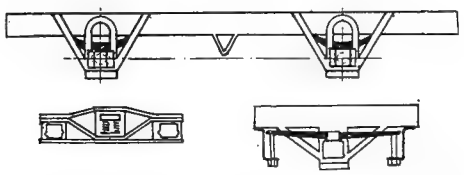


PECO WONDERFUL SALT WAGON KITS

OUR illustration shows the latest type of Peco Wonderful Wagons, the recently introduced private owner salt wagon. As can be seen, the characteristic "dog kennel" roof of these attractive vehicles is fitted, and four different names, Saxa, Mangers, Stafford, and Chance & Hunt, are available. The kits are substantially similar to the well-known P.O. coal wagons, and are replete with every possible detail, from the embossed sides down through the super-detail dummy brake gear, the working axlebox springs and sprung buffers, and the authentic separate "W" irons to the spoked nylon wheels. Needless to add, the famous Peco-Simplex Auto-coupler, which will couple with both Hornby Dublo and Trix couplings, is included, the entire kit retailing at the modest price of 7s. 6d. complete.

We know that the great majority of our readers working in "OO" gauge already possess at least one example of the Peco open wagons (almost every photograph of a model goods yards shows at least one), therefore all we need say is that the specification is exactly as before, and that supplies are in the hands of all dealers.

NARROW-GAUGE CASTINGS



The diagram above shows the actual size of the recently introduced range of narrow-gauge fittings marketed by "K's." They comprise a four-wheel underframe, a set of axle-guards and a diamond-frame bogie, each set retailing at 1s. We understand that these items have been reproduced from originals supplied by a customer who required a supply. "K's" are prepared to produce castings from any suitable original for which they consider there is likely to be a demand. This is, we feel sure, welcome news to all specialist groups.

BEATTIE'S BETTER BASEBOARDS

The Southgate Hobbyshop has recently introduced a useful range of unit baseboards at moderate prices; to add to this it has also introduced a small, simple, duplicated leaflet on elementary baseboard construction. It is written for the beginner who has little or no knowledge of carpentry, and provides sufficient information to enable anyone to begin this most important task with confidence.

SIXTH CONFERENCE OF MODEL RAILWAY CLUBS

The sixth annual joint meeting of the London and Manchester clubs will be held at the Imperial Hotel, Birmingham, on Sunday, October 7, at 2.30 p.m. prompt, preceded by lunch at 1 p.m. An open invitation is issued to other clubs to send representatives, but owing to accommodation limits these must be restricted to two per club. Afternoon tea will be served, the M.M.R.S. being hosts.

Names should be submitted to the undersigned, stating whether lunch is required (M.R.C. members please notify Mr. Boreham direct, not later than October 1).

All attending are expected to bring at least one model for display, and any clubs having points they would care to discuss should submit details to me in writing prior to the function.

J. P. CHETTLE.
Hon. Secretary, M.M.R.S.
218 Woodford Road, Bramhall,
Cheshire.

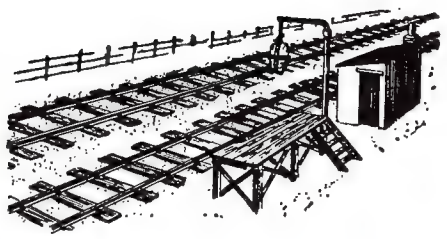
AN INITIAL ERROR

We wish to apologize for two errors which occurred in last month's issue. The article "Marden Valley Again" should have been credited to Mr. *D.* King, and the drawing of the M.O.S. saddle tank to Mr. *Alan* Wright, not as given.

PAGING MR. JOHANSSEN

Will Mr. H. Johanssen, who wrote to Edward Exley Ltd. on July 17 last, requesting them to send certain goods C.O.D., please communicate with them, as his letter did not contain an address. The goods are awaiting dispatch.

READERS' LETTERS



This space is reserved for the free exchange of readers' ideas and opinions

MIDLAND RAILWAY 0-4-0 ST

In the article by Mr. N. S. Eagles on the construction of a Midland 0-4-0 saddle tank it is said that the sole survivor of the smaller type, number 41516,

is still at work at Burton-on-Trent. This statement is rather out of date, as number 41516 was withdrawn from service last October. I was fortunate enough to visit Derby works with the Gloucestershire Railway Society and managed to take a photograph of 41516, which I enclose. It can be noted from the print that 41516 did not have an "all-over" cab.

D. B. ARNOLD.

Gloucester.

AN APPEAL

The Scout troop of which I am Scoutmaster is in the process of building an exhibition layout in "OO" gauge as a means of raising funds and also as a recreational activity for the winter months.

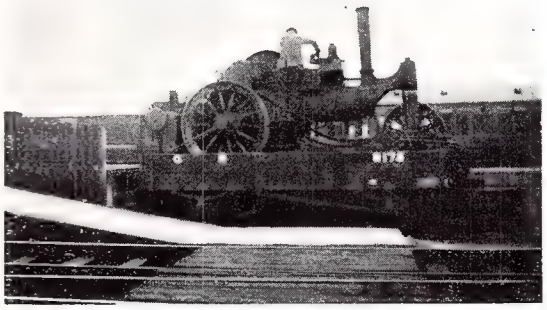
We need a large amount of trackwork in order to complete this, and although we are in possession of some we have not sufficient to start work. I should be grateful to any readers who could help us in this matter, and would welcome track in any condition, of makes such as Wrenn, Formo, etc.

G. A. JEZZARD.

58 Bridgeway, Whitton,
Twickenham, Middlesex.

AN UNUSUAL LOAD

The enclosed photographs were taken at Portadown on the Great Northern Railway of Ireland in May this year, and I thought they might possibly be of interest for publication in the RAILWAY MODELLER. They not only depict an unusual load, i.e. one of the G.N.R.I.'s own steam-rollers, but at the time it



was actually in steam, preparatory to being run off on to an end-loading dock.

As an "unusual load" shot I thought it too good to miss, but unfortunately could not arrange the weather to suit.

I. A. YEARSLEY.

London.

SPRING POINTS FOR HORNBY DUBLO

Your readers who use Hornby Dublo track may be interested to know that modification of the standard isolating point (manually operated) is extremely easily converted to a spring point.

All that is required is to remove the operating lever and two screws, remove the metal strip operating rod and, by gently prising up the fixing tabs, remove the switch contact bar. Then, by bending the P.V.C. covered wires, the point may be biased to either hand without further assistance.

This gives a light, rapid and positive movement, and in six months of hard running ours has not

failed once so far, nor has it needed any further attention. It is situated at the far side of our 6ft. x 4ft. at the remote end of the run-round loop, and carries main-line traffic in both directions as well as the light engine movements.

O. C. WALDEN.

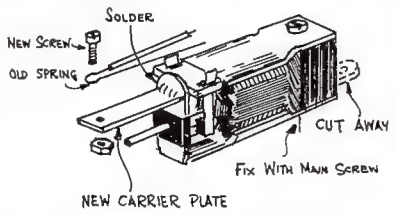
Stony Stratford.

ADAPTING A TRI-ANG MOTOR

Recent experiments with the object of obtaining more power and reliability for a 5mm. model of "Countess" of the Welshpool and Llanfair Railway prompted me to purchase one of the new Tri-ang Mark IV mechanisms, and my efforts in squeezing it into an already completed body may be of interest to readers.

The first step in the modifications necessary entailed the removal of the brass worm wheel, which, after efforts to remove by tapping with a punch were without result, had to be cut away with a piercing saw. Though a somewhat lengthy process, this was accomplished with no damage to the shaft, and it was an easy matter to fit a 20-1 worm by soldering it to the shaft.

The next problem was how to modify the existing brush gear, as I realized that the slender curved pole pieces were at their narrowest just where they were required to fit into the small boiler, but unfortunately the snag was the large brush-holding spring. This difficulty was overcome by soldering a narrow strip of stout brass in front of the end bearing plate, as indicated in the drawing, to give a length as nearly as possible similar to that between the original point of fixing of the brushes and the ends of the spring. I tapped a hole in the centre of this strip at the



end to take a 10 B.A. screw. The original spring was then fitted to this screw underneath a washer to hold the brushes in position, now reversed.

By this modification the brush spring is now tucked away forward in the boiler, while the actual magnet occupies the cab of the locomotive and the pole pieces fit comfortably into the boiler. To gain further space the fixing lug at the rear of the magnet was removed and the end of the original brush fixing screw was used for mounting the motor with a nut on the usual type of platform.

As the chassis had already been constructed for another type of mechanism of much smaller dimensions, it was necessary to deepen the cut for fitting, but this was done with the usual piercing saw and files.

In conclusion I would endorse fully the remarks in Trade Window of the July issue of the RAILWAY MODELLER as to this mechanism's excellent performance.

M. E. J. DEANE.

Bristol.

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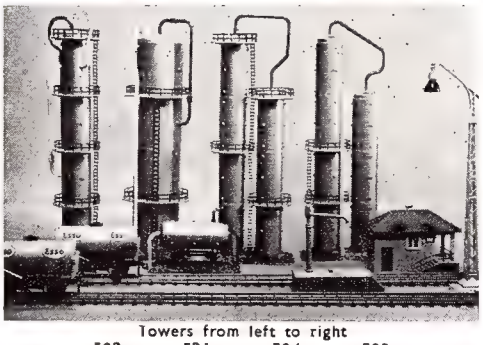

Towers from left to right

502	521	504	503	
20/9	20/9	25/10	21/6	
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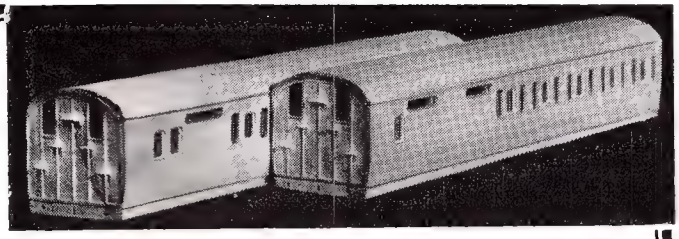

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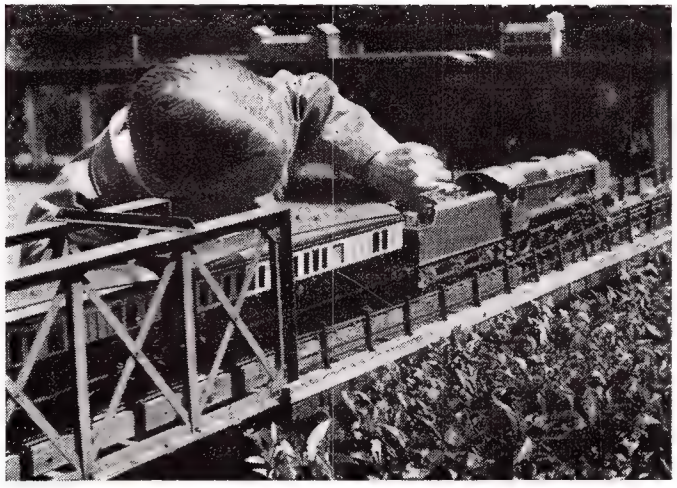

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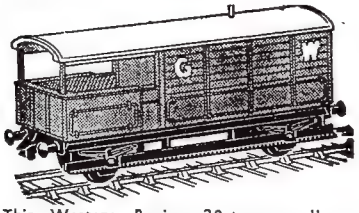

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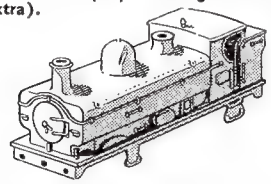

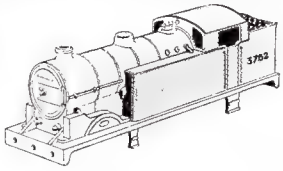

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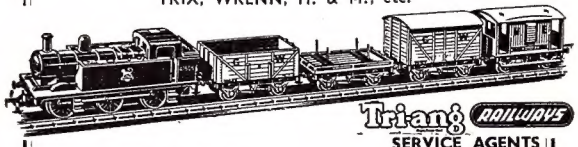

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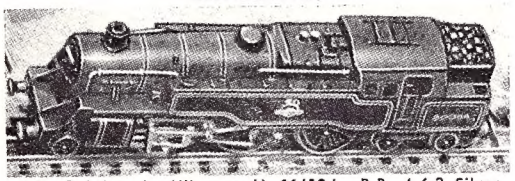

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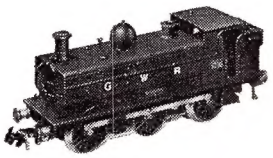

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